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NOTICE

OF THE

ACADEMY OF NATURAL SCIENCES

OF

Philadelphia.

> Chaque grain de sable est une immensité; chaque feuille un monde; chaque insecte un assemblage d'effets incompréhensibles où la réflexion se perd.—LAVATER.

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Natural History in its present state, may be compared to a Temple, beautiful in its materials and proportions, yet in many parts unfinished, while innumerable architects are engaged in its completion. The nations of Europe vie with each other in this fascinating toil; and it may be confidently asserted that they have found, in America, a zealous coadjutor.

What has been the result? To say that confusion has been restored to order, would be doing injustice to Nature: let us rather say that man has at length discovered the harmony, connexion and dependence which characterize the works of Providence; he sees that every object in nature is a link in creation, and that no one thing is wholly insignificant or useless.

But Natural History, however ennobling and delightful to the mind, has hitherto been retarded in this country by various adverse circumstances. It was thought to add nothing to the wealth of him who pursued it; and was too little appreciated, by the mass even of intelligent men, to secure to its cultivators that acknowledgment to which they have so fair a claim. A change, however, has commenced in this particular; and Natural History is beginning to assume its proper place among useful sciences: the Physician and the Chemist find it indispensable to their respective pursuits; the traveller, by its aid, gleans instruction and amusement in the most inhospitable solitudes; it is becoming the fire-side recreation of both sexes; even the sordid man invokes its assistance ; and every one may reap abundant gratification to requite him for the time and labor he may bestow upon it.

Without further preface we propose to introduce the reader to some acquaintance with the "Academy of Natural Sciences of Philadelphia ;" for we are aware that this institution has many members both in Europe and America, whose remote situation will render the following details doubly interesting ; while they will be more or less gratifying to every friend of science.

The Academy originated on the 25th of January, 1812; at which time a few gentlemen, (among whom was Mr. Thomas Say,) resolved to meet once in every week for the purpose of receiving and imparting information. Even at that late period the study of Natural History was, in this country, confined to a few zealous individuals; and although several societies had been organized for concentrating the scientific talent and enterprise of Philadelphia, their duration was for the most part ephemeral. About this period Natural History received a permanent impulse from the appearance of Wilson's "American Ornithology" and from the personal exertions and published tracts of Dr. Benjamin Smith Barton. Botany, so ably illustrated by the ardor of Dr. Muhlenberg, had many votaries at the time we allude to: among the most zealous of these were Mr. Z. Collins, Mr. Nuttall, the late Dr. Waterhouse,* &c. Mr. Say was indefatigable in several branches; Mr. Ord was devoted to Zoology; Mr. Godon, Mr. Conrad and some others were active in exploring the mineral resources of this vicinity; Mr. Maclure was assiduously engaged in Geology; whilst many others, who have since become distinguished for their scientific acquirements, were then just venturing on the threshold of inquiry.

Most flourishing institutions have had their probationary difficulties and discouragements. The Academy was for some time located in a very disadvantageous situation, and may even be said to have struggled for an existence. Books and collections of natural objects, those indispensable parts of such an establishment, accumulated but slowly; and money, that *primum mobile* of human achievements, was sparingly at the disposal of an embryo institution. At this juncture the Academy found a truly munificent friend in Mr. William Maclure. This gentleman had amassed a handsome fortune in mercantile pursuits; and being possessed of an acute mind and extensive scientific acquirements, he now attached himself to the Academy with a zeal and liberality which have few examples on record. During a protracted visit to Europe, he assiduously collected a great number of scientific works which he presented to his favorite institution. He traversed the continent of Europe from Italy to Sweden, and in every situation found something to feed the ardor of his mind and aid the cause of science. In these fruits of unwearied personal industry the Academy shared largely; and its present valuable collections may be said to have mainly originated in the contributions of Mr. Maclure. It is but justice, however, to observe, that from the commencement of the society its members have been characterized by untiring zeal and industry; and that their unostentatious but effectual exertions in the cause of science, were the great incentives to Mr. Maclure's subsequent liberality.

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* Dr. Waterhouse was the first person who gave popular lectures on Botany in Philadelphia.

The Academy was incorporated in 1817; about which time the publication of the "Journal" was commenced. From that period its permanence and prosperity may be dated. Its location, though not the most desirable, was respectable, and in some respects convenient; and its collection of books and specimens augmented rapidly. It was soon found necessary to provide more extensive accommodations than those hitherto enjoyed, and in the spring of 1826 the Academy purchased the spacious building they now occupy, and have spared no expense in adapting it to their purposes.

This building, which was originally designed for a place of worship, is situated at the corner of Twelfth and George streets: it is a quadrangular, stuccoed brick edifice, about forty four feet square, and surmounted by a dome. It has no partitions, but presents a single saloon, with a gallery eight feet broad traversing the wall on all sides midway between the floor and ceiling. The light is admitted from the dome, and from six side windows above the gallery.

The lower part of the building is occupied chiefly as a Library and meeting-room, while the gallery is devoted to the collections. The latter are displayed in upright cases against the walls, and in horizontal cases against the railing of the gallery. The objects are arranged in accordance with the most approved systems; and their generic and specific names and localities, together with the names of the donors, are conspicuously attached to each. The attention which is paid to these particulars renders the cabinet of the Academy not only pleasing to the eye, but very satisfactory for reference; and it is obvious that without such care the most splendid collections are productive of more disappointment than gratification to the beholder.

Notwithstanding the efforts thus made to provide for the Academy's collections, the latter have recently augmented so greatly as to require much additional room. This, however, is not likely to be speedily obtained. The liberality of the members, by a gratuitous subscription of more than two thousand dollars, added to a small fund reserved for the purpose, has already placed the society in possession of the property just noticed; but there yet remains of the purchase money a considerable sum unpaid. Although the strictest economy is practised in order to liquidate this encumbrance, it cannot be effected until the lapse of several years, unless through sources of patronage not at present anticipated.—But may we not reasonably indulge the hope, that such patronage will be ultimately extended to an institution which is already conspicuous for its liberality and usefulness?

To make these collections extensively useful, and to diffuse the love of science in every class of the community, the Academy about two years since passed a law rendering its museum accessible to the public ; and it is now opened to the *gratuitous* admission of citizens and strangers on the afternoons of Tuesdays and Saturdays throughout the year.

The meetings of the Academy are held every Tuesday evening ; they are open to strangers excepting the last meeting in each month, which is reserved for the private affairs of the institution. The other, or ordinary meetings, are devoted to the reading of scientific papers, verbal communications, the receiving of donations, &c. &c.

The present number of resident members is about sixty. The list of correspondents is much more numerous, and embraces a large proportion of the eminent scientific men in all parts of the world.

The library contains upwards of two thousand two hundred volumes on scientific subjects, exclusive of maps, portfolios of engravings, &c. The collection is constantly augmenting by purchases, donations and exchanges, and embraces very many of the rare and standard works on the natural sciences. A large proportion of these, as already observed, were selected in Europe by Mr. Maclure, and by him presented to the institution. Exclusive of the scientific works are upwards of a thousand volumes on subjects foreign to the immediate objects of the Academy : most of these were also presented by Mr. Maclure.

The "Journal of the Academy" was commenced in the year 1817. This work is chiefly confined to brief and technical statements of discoveries in Natural History ; in other words, that which is not new (or believed to be so) is not admitted into its pages. A periodical restricted within such bounds must necessarily be chiefly interesting to scientific persons, among whom it is widely circulated in America and Europe. It is replete with important details in every branch of science, and probably contains a greater body of facts in reference to the natural history of this country than any other work. Five octavo volumes have already been published, and the sixth is nearly completed; and perhaps an outline of their plan and purpose cannot be better conveyed than by quoting a part of the preface to the first volume:

"In further pursuance of the objects of their institution, the Society have now determined to communicate to the public such facts and observations as, having appeared interesting to them, are likely to prove interesting to other friends of Natural Science. They do not profess to make any periodical communication; but well knowing how desirable it is that persons engaged in similar pursuits should be made acquainted as early as possible with what has been done by their fellow-laborers in the fields of Science elsewhere, they mean to publish a few pages whenever it appears to them that materials worthy of publication have been put in their possession. In so doing, they propose to exclude entirely all papers of mere theory,—to confine their communications as much as possible to facts,—and by abridging papers too long for publication in their original state, to present the facts thus published clothed in as few words as are consistent with perspicuous description."

The views expressed in the preceding paragraph have been strictly conformed to; in consequence of which the journal continues to be issued when original papers are offered, without reference to any precise interval. Among the contributors to the *Zoological* department we may mention the names of Mr. Say, Prince Charles Lucian Bonaparte, Mr. Lesueur, Mr. Ord, Dr. Harlan, Mr. Wood, Dr. Green, Dr. R. Coates, Dr. S. L. Mitchill, Mr. Hentz and Dr. Godman.

The *Botanical* communications are chiefly from Mr. Nuttall, Mr. De Schweinitz, Mr. Stephen Elliott, and Mr. S. W. Conrad.*

In *Geology and Mineralogy*, many papers will be observed from the pens of Mr. Maclure, Mr. Nuttall, Mr. Vanuxem, Mr. Keating, Dr. Troost, Mr. J. P. Wetherill, Mr. T. Bowen,

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* Now Professor of Botany in the University of Pennsylvania.

Mr. T. A. Conrad, Dr. Edwin James, Mr. Dietz, and Dr. S. G. Morton.

In *Chemistry and Anatomy* are some valuable essays from Professors Hare, Horner, and A. D. Bache, and from Mr. Henry Seybert.

We next propose, as a part of the task we have attempted, to offer some brief particulars in reference to the *collections* of the Academy, in the various departments of science. These collections, it is obvious, will not bear a comparison with those of the great European museums, many of which have been established and fostered by the patronage of national governments: but we trust the reader will bear in mind that the Academy has been but a few years in existence; and that its present collections, and other property, have been derived exclusively from the liberality, talents and industry of private citizens. These facts induce us to give an honest summary of the Academy's collections; not doubting that their deficiencies will from time to time be provided for, as heretofore, by the exertions of members, and others interested in the advancement of science.

For the purpose of convenience, the collection may be divided into three classes: 1. Zoology; 2. Botany; 3. Geology and Mineralogy.

Zoology.—The constant attention required by the larger Zoological subjects, and the space necessary to their proper exhibition, are difficulties in the way of extensive collections which few institutions can provide for. Hence the Academy has but recently attempted to make systematic collections of Quadrupeds and Birds. The commencement, however, has proved eminently promising; and this success is in a great degree attributable to the exertions of a few individuals, among whom is Dr. Burrough, a resident member of the Academy. This gentleman has recently returned from a voyage round the world, in the progress of which he visited some of its most interesting regions. The scientific zeal and industry evinced by him on these occasions, are deserving of unqualified praise. South America, India, and the intervening ocean, were all laid under contribution; and he has returned to his native country freighted with the treasures of nature. Among the larger quadrupeds brought by Dr. Burrough, we may mention the skin and skeleton of an adult Rhinoceros, from upper India; the Horse-tail ox, or Yak, (*Bos grunniens,* Lin.) from the mountains of Thibet; the Cashmire Goat, the Nepaul Muntjac, &c. &c.

These objects, together with a varied series of organised beings of the subordinate classes of animals, have been deposited, with a munificent liberality, in the Academy of Natural Sciences; where neither expense nor labour will be spared to have them displayed in a manner consonant with elegance and utility.

Perhaps no one of the natural sciences has been more assiduously cultivated by the members of the Academy than *Ornithology.* This observation is established by a reference to the splendid works of Mr. Alexander Wilson, Mr. George Ord and Prince Charles Lucian Bonaparte. These gentlemen have widely diffused a taste for this elegant study, but have in truth, left little to be divulged by future inquirers. The collection of Birds in the Academy is not very extensive, but the number of species already exceeds six hundred; among which are many rare and beautiful specimens. Among the larger birds are the male and female Condor, (Vultur gryphus) from South America. The Eagle of Washington (Falco Washingtonianus) recently described for the first time by Mr. Audubon. Another bird rare in American collections is the *Bengal Adjutant*, an adult and very finely characterized individual. The Academy has lately become possessed of a splendid collection of the birds of Surinam, and the adjacent continent and seas, presented by Dr. Hering of that province, and a correspondent of the Academy. The collection embraces upwards of two hundred and fifty species, most of which were procured by the personal exertions of the donor. They are now in progress of arrangement, and will constitute a beautiful monument of the zeal and munificence of Dr. Hering. This handsome present has already stimulated the members to additional exertions in the department of Ornithology; and it is confidently believed that in the course of another year the Academy will be in possession of nearly all the species of birds inhabiting the middle Atlantic states. To Dr. Burrough the Academy is indebted for nearly all the East Indian birds in its possession, comprising many infrequent genera, and upwards of two hundred species. In this department the classification of the Baron Cuvier is strictly adopted.

The collection of *Fishes* embraces a great variety, and is rapidly augmenting. A series of those inhabiting the waters of Guayana, has been presented by Dr. Hering. Dr. Burrough has deposited a small but extremely interesting collection from some of the remoter provinces of India. The American species have also of late received considerable accessions.

The cabinet of *Shells*, which is arranged in horizontal cases, presents one of the most ornamental portions of the Academy's museum. The species exceed fifteen hundred, each placed on a plaster pedestal, with the name affixed; much labour has been bestowed for several years past in ascertaining their generic and specific designations, which are now, in a majority of instances, established with certainty. An interesting part of the series is formed by the fresh water and land shells collected by Col. Stephen H. Long in the western States, and by him presented to the Academy. Among the land shells are many rare and beautiful species, collected by Dr. Burrough among the mountains of India. The same gentleman has also presented an equally interesting series of the marine and fresh water shells of various parts of the world. In arranging this department, the classification chiefly followed has been that of M. Lamarck.

The *Reptiles* are numerous, and include a large proportion of the known American species of Testudo, Rana, Salamandra, Coluber, &c. This portion of the collection has of late received considerable additions through the exertions of Dr. Harlan, and those of Dr. William Blanding of Camden, South Carolina.

Dr. Hering has also greatly enriched this department. During the autumn of the past year the society received from that gentleman upwards of two hundred species of the Serpents, Lacerta, and other Reptiles of the north-eastern regions of the South American continent. We have much pleasure in adding, that the liberality of Dr. Hering to the Academy, has been suggested and directed by the Rev. Lewis de Schweinitz, of Bethlehem, Pennsylvania. The collections were submitted to the discretional distribution of the latter gentleman, who immediately transmitted them entire to the Academy of Natural Sciences.

The *Crustacea* and *Zoophytes*, embrace an extensive series of American and some foreign species.

The *Insects* are numerous, especially the Lepidoptera. Great difficulty, however, has been found in preserving them; and several successive collections have been destroyed by damp, or by the inroads of predaceous insects. But it gives us much pleasure to state that a cabinet of upwards of four thousand species, (two thirds of which are American) chiefly collected by a member of the Academy, will be presented to the institution so soon as effectual means can be devised for its preservation. With the Birds presented by Dr. Hering were four hundred species of insects, in fine order, from the province of Surinam.

BOTANY.—The Academy possesses about ten thousand species of plants, among which is a choice American Herbarium, collected by Mr. Thomas Nuttall. This gentleman is well known to have been for many years ardently engaged in Botanical researches; he has traversed the United States and Territories in almost every direction,—the courses of the Missouri and Arkansa rivers,—the great Lakes,—Carolina, Georgia, Louisiana, &c. &c. In the prosecution of his travels

Mr. Nuttall collected and carefully preserved upwards of four thousand species of plants, all of which are now embraced in the Academy's Herbarium.

Accompanying Dr. Hering's recent donation of Birds, are four hundred species of the plants of Surinam.

There are also small collections from the Andes, from Southern Africa and India. The European collection, presented mainly by Mr. Maclure, is both extensive and valuable. To conclude this part of our subject, we record with pleasure that the present proprietor of the Botanical collection of the late Dr. Baldwin, has intimated his intention of adding it to the Herbarium of the Academy.

GEOLOGY AND MINERALOGY.—The Geological series is perhaps the most complete of the Academy's collections. It comprises about five thousand specimens, of which two thirds are fossil organic remains of animals and plants. The fossils are arranged according to the formations in which they occur, and consequently afford matter of great interest to the geologist. The different suites may be enumerated as follow ;

1. A series of the rocks of Europe, Primitive, Transition and Basaltic; collected between Naples and the north of Italy, and thence through Germany to the Baltic Sea, by Mr. Maclure, and by him presented to the Academy.

2. Series of the Lavas of Vesuvius, collected from the various currents ejected by that mountain during several centuries. Presented by Robert E. Griffith, M. D.

3. Rocks of several of the West India Islands: collected and presented by Mr. Maclure.

4. Series of the Greenstone rocks of Scotland; and a section of Salisbury Crags, near Edinburgh. Collected and presented by S. G. Morton, M. D.

5. Rocks from the northern shore of Lake Superior. Presented by Zina Pitcher, M. D. U. S. A.

6. Rocks from the route of the Erie and Hudson Canal.—Presented by the Hon. Stephen Van Rensselaer, of Albany, N. Y. Besides the preceding are several smaller series of rock formations and many insulated specimens.

7. A series of Vegetable and other impressions from the coal districts of Pennsylvania, Virginia, Ohio and Rhode Island.

8. An extensive collection of fossils from the secondary Limestone region of the Valley of the Mississippi, including the entire collection of the late Mr. Clifford, of Lexington, Ky. deposited in the Academy by Mr. John P. Wetherill.

9. A collection of Pentremite and Encrinite fossils, with numerous other organic relics, from the vicinity of Huntsville, Alabama. Presented by Mr. Samuel Hazzard.

10. One thousand British fossils, being the entire collection of the late Mr. Steinhaur, and deposited in the Academy by Mr. John P. Wetherill.

11. A series of fossil shells, illustrating all the formations of the Paris Basin, and arranged according to the system of Mess. Cuvier and Brongniart. This collection was presented conjointly by Mess. Keating, Vanuxem, M'Euen and Lesueur.

12. Several hundred fossil Shells, Crustacea and Zoophytes, illustrative of the secondary formation of New Jersey, known as the *Marl region.* Deposited by S. G. Morton, M. D.

13. An extensive series of the Tertiary fossils of Maryland, Virginia, &c. &c. embracing an hundred species and several hundred specimens, chiefly collected by Mr. T. A. Conrad.

14. Series of the bones and teeth of the Mastodon, collected in various parts of the United States, and especially in the valley of the Mississippi. A large proportion of these are deposited by Mr. Wetherill. Forming a part of the same collection are ten huge teeth and some bones of the fossil American Elephant, chiefly obtained from the valley of the Mississippi. Also parts of three skeletons of the Megalonyx from the same country: these comprise several ribs, vertebræ, bones of the leg, foot, &c.

The *Mineralogical* cabinet embraces a fine series of American minerals; among which are many beautiful specimens from Lockport, in N. Y. collected and deposited by Mr. Thomas Fisher. They consist chiefly of the carbonates and sulphates of lime, and the sulphate of strontian. The salts of lead from the Perkiomen mine are probably the finest hitherto obtained from an American locality. The European collection is also well chosen, though deficient in some classes. A large number of the foreign specimens was presented by the President of the Society, Mr. Maclure. A thousand choice specimens, constituting the collection of Dr. Thomas McEuen, were deposited by that gentleman with his characteristic liberality and love of science. Mr. Henry Seybert, Mr. Jos. P. Smith and others, have also of late contributed largely to this department. The mineral collection now embraces, collectively, about three thousand specimens. In arranging the minerals, the system of Professor Cleavland has been adopted throughout.

Such is the present situation of the Academy of Natural Sciences; and while we feel an honest pride in recording the success of a favourite institution, our gratification is much enhanced by observing the collateral exertions which are making in almost every section of the Union to extend the boundaries of scientific information. The American Philosophical Society, perhaps the oldest of our scientific and literary institutions, acting on the broad basis of "promoting useful knowledge," has done and is still doing a laudable share in the accomplishment of that great design, in which is included every branch of natural history. The New York Lyceum, established with similar views to the Academy, is not behind the latter in the talents and industry of its members, nor perhaps in the degree of its success. Its "Annals" published on the same plan with the Academy's Journal, are indispensable to the student of American Natural History, while its collections are already extensively numerous and valuable.

We might greatly expatiate on this pleasing subject, so fruitful in promise to the cause of Science. Suffice it, in conclusion, to observe, that there is reason to hope that in a very few years every large town in the United States, will have a well organized institution for disseminating the knowledge of Natural History.

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